

1 **INTERNET BASED COMPUTER SYSTEM COMPONENT EXCHANGE**

2
3 **BACKGROUND OF THE INVENTION**

4 1. Field of the Invention

5 The invention relates to an Internet based computer system component exchange. More
6 specifically, the invention comprises a system and method for providing an exchange server
7 complex in a network for executing buy orders for purchasing computer components.

8 2. Description of the Prior Art and Related Information

9 As personal computers (PCs) have become more a part of people's everyday lives, sales
10 have increased for PCs, thus creating a major market for those who assemble and sell them. At
11 the same time, demand for computer components has increased, causing equal increases in
12 manufacturing of those computer components. Such computer components as used herein may
13 comprise both internal computer components such as processors, hard disk drives, floppy disk
14 drives, memory chips and internal modems; or external computer components or peripherals
15 such as printers, scanners and external modems. Further, due to the Internet and increased use
16 other networks, the same market changes have occurred with respect to mid-range or server
17 computers. Further, these computer components may comprise components at the computer
18 assembly level, or sub-assembly level such as computer components for computer motherboards.

19 More recently, due to historical high demand, more and more sellers of computers, and
20 manufacturers of computer components have entered the market. This has caused higher
21 supplies of both computers and computer components to enter the market. This is especially so
22 given the advent of computer component interface standards making these computer components
23 more interchangeable. In effect, computer components have become less like specialty items
24 directed toward proprietary computers, and more like interchangeable commodities. Thus, these
25 market supply pressures have caused lower profit margins for both computer sellers who
26 purchase computer components and computer component suppliers.

1 Heretofore, most business to business transactions for computer components have
2 occurred through traditional channels such as sales calls and paper intensive negotiation. Such
3 people intensive selling and buying techniques have thus become less and less practical.
4 Heretofore, there has been a need for a system to lower costs of business to business transactions
5 for the purchase of computer components.

6 On-line ordering systems have been devised in order to bring buyers and sellers together
7 in a paperless or semi-paperless system for conducting on-line sales transactions. One such
8 system for processing sales transactions is disclosed in U.S. Pat. No. 4,799,156 for an Interactive
9 Market Management System. That patent discloses a plurality of buyers and a plurality of sellers
10 which can be linked to each other by means of an interactive market management system
11 (IMMS) for interactive communications. Each of the participating entities which is a subscriber
12 to the system must always operate through the IMMS, which serves as a focal point or hub
13 through which all transactions must be funneled.

14 In U.S. Pat. No. 5,557,518, a system is described for trusted agents for open electronic
15 commerce. The system of this patent uses "money modules" to create a secure transaction
16 environment for both the buyer and the seller of electronic merchandise and services. The
17 primary objective of the patent is to provide a system which allows customers to buy electronic
18 merchandise or services on demand without enrolling in an electronic community. In the
19 described system, a customer and supplier trusted agent establish a secure session. The customer
20 trusted agent communicates with a first money-module and the supplier trusted agent
21 communicates with the second money-module. The supplier trusted agent delivers the electronic
22 merchandise. The first money module transmits electronic money to the second money module.
23 Upon successful completion of the money payment, the first money module informs the
24 customer trusted agent, and the second money module informs the supplier trusted agent. The
25 supplier then logs the sale and the customer may use the purchased electronic merchandise.

26 In U.S. Pat. No. 5,319,542, a system for ordering items using an electronic catalog is
27 disclosed. The system of this patent establishes a private catalog resident on a customer's

1 computer system. The customer can electronically requisition a product based on the
2 information provided in the catalog and route or requisition through the appropriate approval
3 process within the enterprise. The requisitions are then processed through the customer's
4 procurement system and transmitted electronically as purchase orders to the supplier.

5 In U.S. Pat. No. 5,592,378, a computerized order entry system and method is disclosed
6 which includes a plurality of servers, data entry devices, back-end systems and data bases. The
7 computer order entry system is intended to permit placement of orders by capturing order
8 information and storing the order information through the data capture mechanism. This is
9 accomplished by a sequence of steps to search multiple search categories.

10 U.S. Patent No. 5,970,475 provides for an automated procurement system used by
11 employees within an organization to acquire goods and services that they require.

12 However, none of the systems described above are specifically tailored to enabling
13 computer component business to business exchange. Further, none of the above described
14 systems provide for financial rewards for using an on-line exchange system. Further, none of the
15 above-described systems provide for ownership of the on-line exchange system by the businesses
16 participating in the exchange, rewarding those businesses that use the exchange more often.
17 Further, none of the above described systems offer larger percentages of ownership of the on-line
18 exchange system based on successful referrals to the exchange system. Further, none of the
19 above described systems provide for payments of referral fees from value added resources based
20 on that value added resources' participation in a transaction from the exchange system.

21 **SUMMARY OF THE INVENTION**

22 A system and method for providing a computer component exchange in a network for
23 executing buy orders for purchasing computer components is disclosed. A plurality of
24 processors, also called owner-processors herein, are electrically connected to the network. At
25 least a first owner-processor is adapted to transmit electronic buy orders through the network for
26 purchasing computer components. At least a second owner-processor is adapted to receive buy
27 orders from the network.

1 The system comprises one or more servers, called a server or an exchange server complex
2 herein, that is electrically connected to the network. A plurality of investment instruments
3 comprising shares of ownership interests in the exchange server complex are stored as data
4 records in an accounting database. At least some of the owner-processors are capable of being
5 associated with at least one of the shares, thereby defining an ownership interest in the exchange
6 server complex for a proprietor of the respective owner-processor. The accounting database is
7 stored on one of the servers of the exchange server complex for storing data representing
8 allocation of profits among the owner-processors that are associated with the shares, also called
9 investment instruments herein. The profits are collected and calculated from fees charged for
10 transactions completed in the exchange server complex. The profits are represented as data
11 records in the database for tracking such earned profits.

12 The system further comprises one or more computer programs, collectively called a
13 computer program herein, for execution on one or more of the servers in the server complex, the
14 computer program having a plurality of functions or modules. Each of the modules comprises an
15 executable set of instructions for execution in the exchange server complex. One of the modules
16 comprises a means for receiving one or more buy orders for computer components from the first
17 owner-processor, the first owner-processor thereby comprising a buyer's owner-processor.
18 Another module comprises a means for matching the one or more buy orders with the second
19 owner-processor, the second owner-processor comprising a seller's owner-processor. Another
20 module comprises a means for calculating a fee for matching the buy order with the second
21 owner-processor. Another module comprises a means for charging the calculated fee to at least
22 the first or second owner-processors, or to both the first and second processors. Another module
23 comprises a means for calculating a net profit resulting from charging the calculated fee.
24 Another module comprises a means for apportioning the net profit based on the number of shares
25 associated with each owner-processor. Another module comprises a means for updating the
26 accounting database based on the apportioning of the net profit. The updating is accomplished

1 by relating net profits with the share records through a relational means such as a relational
2 database management system (RDBMS).

3 **BRIEF DESCRIPTION OF THE DRAWINGS**

4 Fig. 1 is a block diagram illustrating a system for computer component exchange in a network
5 for executing buy orders for purchasing computer components;

6 Fig. 2 is a front view of an owner-processor executing a network or Internet browser for
7 accessing the system of Fig. 1; and

8 Figs. 3-4 show flow diagrams illustrating the steps in a method performed in the system of Fig.
9 1.

10 **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

11 With reference to Fig. 1, a block diagram illustrating a system 50 for computer
12 component exchange in a network 150 for executing buy orders 20a for purchasing computer
13 components 100 is shown. A plurality of owner-processors 10a, 10b, 10 are electrically
14 connected to the network 150. At least a first owner-processor 10a is adapted to transmit
15 electronic buy orders 20a, 20 through the network 150 for purchasing computer components 100.
16 At least a second owner-processor 10b is adapted to receive buy orders 20a, 20 from the network
17 150.

18 The system comprises an exchange server complex 51 that is electrically connected to the
19 network 150. A plurality of investment instruments 56a, 56b, 56 comprising shares of ownership
20 interests in the exchange server complex 51 are stored as data records in an accounting database
21 57. At least one of the shares 56a is associated with the first or the second owner-processor 10a,
22 10b. In Fig. 1, the first owner-processor 10a is associated with a share indicated at 56a, and the
23 second owner-processor 10b is associated with a share indicated at 56b. An accounting database
24 57 is stored on the exchange server complex for storing data representing allocation of profits 30
25 from operation of the exchange server complex 51 among the owner-processors 10a, 10b and 10
26 that are associated with the investment instruments 56a, 56b and 56. The profits 30 are
27 represented as data records in the accounting database 57 for tracking such earned profits 30.

1 The system further comprises a computer program 54 having a plurality of functions or
2 modules 59. The computer program 54 may comprise a plurality of computer programs 54 for
3 execution in a plurality of servers in the exchange server complex 51. Each of the modules 59
4 comprises an executable set of instructions for execution in the exchange server complex 51.
5 One of the modules 59 comprises a means for receiving one or more buy orders 20a for computer
6 components 100 from the first owner-processor 10a, the first owner-processor 10a thereby
7 comprising a buyer's owner-processor 10a. Another module 59 comprises a means for matching
8 the one or more buy orders with the second owner-processor 10b, the second owner-processor
9 10b comprising a seller's owner-processor 10b. Another module 59 comprises a means for
10 calculating a fee for matching the buy order 20a with the second owner-processor 10b. Another
11 module 59 comprises a means for charging the calculated fee to at least the first or second owner-
12 processors 10a or 10b, or to both the first and second processors 10a and 10b. Another module
13 59 comprises a means for calculating a net profit 30 resulting from charging the calculated fee.
14 Another module 59 comprises a means for apportioning the net profit 30 based on the number of
15 shares 56a, 56b, 56 associated with each owner-processor 10a, 10b, 10. Another module 59
16 comprises a means for updating the accounting database 57 based on the apportioning of the net
17 profit 30. The updating is accomplished by relating net profits 30 with the share records 56a,
18 56b, 56 through a relational means 56 such as a relational database management system
19 (RDBMS).

20 According to the above described system 50, the investment instruments 56a, 56b, 56
21 comprise means for providing incentive for proprietors of the owner-processors 10a, 10b, 10 to
22 place or receive buy orders 20a with the exchange server complex 51.

23 One of the modules 59 may comprise a means for associating at least one additional share
24 56 to each owner-processor 10 if the proprietor of the respective owner-processor 10 refers a
25 threshold number of other owner-processors 10 to transmit buy orders 20 to the exchange server
26 complex 51. For example, the referral may be accomplished through an automated referral from

1 the respective owner-processor 10, wherein the exchange server complex 54 is able to detect a
2 referral source within a web page link from the referring owner-processor 10.

3 One of the modules 59 may comprise a means for withdrawing payment for the second
4 owner-processor 10b from an electronic escrow account 72a associated with the first owner-
5 processor 10a after the proprietor of the first owner-processor 10a receives the computer
6 components 100 that the buy order 20a was for. Normally, without using the escrow agent 70,
7 the components follow the path indicated at 102 and 104, wherein the components are shipped
8 from a proprietor of the second owner-processor 10b to a proprietor of the first owner-processor
9 10a. However, using the module 59 that provides escrow functionality, the computer
10 components follow the path indicated at 106, wherein the components are first shipped to the
11 proprietor of the escrow agent server 70, and then to the proprietor of the first owner-processor
12 10a after payment is received at the escrow agent server 70. Similarly, each of the other owner-
13 processors 10b, 10 may be associated with an escrow account 72b, 72 to provide for escrow
14 functionality.

15 A bank server 90 may be electrically connected to the network 150. Such a bank server
16 150 may comprise one that is adapted to allow for secure electronic transactions such as CHASE
17 ONLINE BANKING by the Chase Manhattan Bank of New York, New York. The module 59
18 for charging the calculated fee may comprise a means for electronically debiting a first bank
19 account 92a associated with the first owner-processor 10a, a second bank account 92b associated
20 with the second owner-processor 10b, or both the first bank account 92a and the second bank
21 account 92b. Other owner-processors 10 may have bank accounts 10 associated with them that
22 can be electronically debited.

23 Similar to debit operation performed by the module 59 for charging, for module 59 for
24 apportioning may electronically credit a bank account 92 associated with each of the plurality of
25 owner-processors 10 that are associated with shares 30 based on the number of shares 30
26 associated with each respective owner-processor 10.

1 The module 59 for matching may match a set of requirements in the buy order 20a with
2 the second owner-processor 10b if the second owner-processor indicates that a proprietor of the
3 second owner-processor 10b is able to supply computer components 100 that meet the set of
4 requirements. The second processor 10b may indicate so with a set of specifications 20b
5 transmitted to the exchange server complex 51 as a data stream or set of packets. The buy order
6 20a and specifications 20b may be formatted into an electronic commerce standard format. The
7 electronic commerce standard format comprises a bill of materials format as described by a
8 ROSETTANET industry standard which may be found at www.rosettanel.org.

9 One of the modules 59 may comprise a means for referring the first and second owner-
10 processors 10a-10b to a value added service 80. The referring module 59 may charge a referral
11 fee to the value added service 80 when the first and second owner-processors 10a-10b are
12 referred to the value added service 80. The module 59 for apportioning is further for
13 apportioning the fee received from the value added service 80 as part of the net profits 30 among
14 the owner-processors 10a, 10b 10 based on the number of shares 56a, 56b, 56 associated with
15 each owner-processor 10a, 10b, 10. The value added service 80 may comprise, for example, a
16 scheduling server for a computer component shipping agent for providing transportation of the
17 computer components 100 that are for the buy order 20a from a proprietor of the second owner-
18 processor 10b to the proprietor of the first owner-processor 10a.

19 One of the modules 59 may comprise a means for publishing statistics based on a
20 plurality of buy orders 20 received from a plurality of owner-processors 10 that are each matched
21 with at least one other owner-processor 10. The module for publishing may produce an
22 electronic ticker tape for display on an attached monitor of one or more of the owner-processors
23 10 for informing the proprietor of each respective owner-processor 10 of closing prices per unit
24 by type of computer component in the latest buy order 20 in time that was matched with an
25 owner-processor 10 for each type of computer component.

26 With reference to Fig. 2, a front diagrammatic view of an owner-processor 10 executing a
27 network, or Internet, browser 202 is shown. The owner-processor 10 may comprise a CISC

1 based system such as a personal computer (PC) executing the NETSCAPE browser by Netscape,
2 Inc. of Mountain View, California, or RISC based system such as a SUN workstation by Sun
3 Microsystems, Inc. of San Jose, California executing the INTERNET EXPLORER browser by
4 the Microsoft Corporation of Bellevue, Washington, or other HTML, XML, or Java compliant
5 combination of hardware and software. The owner-processor 10 includes a monitor 200 for
6 presenting the browser 202 and a client module (one of 59 in Fig. 1) of computer program 54
7 executing in the browser 202. The client module 59 may include one or more applets written in
8 JAVA, ACTIVE X or other browser compliant languages for controlling client functions.

9 In Fig. 2, a main menu 210 of the system is presented to allow the proprietor of the
10 owner-processor 10 to execute a variety of modules 59, for example, a module 59 for placing a
11 buy order 20, submitting computer component specifications 20b that the owner-processor 10 is
12 making available for sale, browsing buy orders 20 submitted by other owner-processors 10, or
13 negotiating a buy or sell deal with another owner-processor 10. The module 59 for publishing is
14 presenting a continuously updating ticker tape in the browser 202. The ticker tape 220 displays
15 the current market prices for computer components based on the latest matches or sales executed
16 on the exchange server complex 51. The ticker tape 220 may be self-updating by using means
17 such as a JAVA applet or other browser executable software such as ACTIVE X.

18 With reference to Figs. 3-4, a flow diagram illustrating the steps in a method performed
19 in the system of Fig. 1 for receiving and matching a buy order 20 is shown. The proprietor of the
20 first owner-processor 10a produces a buy order 20a, step 300. The buy order 20a is transmitted
21 over the network 150 to the exchange server complex 51, step 302. The exchange server
22 complex 51 receives the buy order 20, step 304. The exchange server complex posts the buy
23 order 20 in an on-line public buy order list, step 306. The buy order list may comprise a table in
24 the accounting database 57, or a RDBMS separate from the accounting database 57. The
25 proprietor of the second owner-processor 20b may produce one or more specifications 20b of
26 computer components 100 that it offers, step 308. Similar to the buy orders 20a, the

1 specifications are posted and stored in a specifications lists that may comprise a table in the
2 accounting database 57, or a RDBMS separate from the accounting database 57, step 310.

3 The computer program 54 attempts to match the buy order 20a with the specifications
4 20b posted. The computer program 54 compares such requirements of the buy order such as type
5 of computer component, price, warranty and other requirements with a posted specifications
6 entry 20b defining the same, including an offering price, step 312. If an exact match is not
7 found, step 314, for example, if the price offered in the specifications entry 20b is higher than the
8 requirements price in the buy order 20a, 314, the closest or best match is located for the buy
9 order 20a, step 316. If a best match is found in step 316, then the system sets up negotiations
10 between the first and second owner-processors, 10a and 10b, step 318, assuming that the second
11 owner-processor 10b presents the best match for the buy order 20a. Negotiations may be
12 facilitated using electronic mail through the exchange server complex 51, a real-time message
13 program such as INSTANT MESSAGENDER by America On Line, Inc. of Dulles, Virginia, or
14 by providing contact information to both owner-processors 20a and 20b.

15 If a deal is closed between the first and second owner-processors 10a and 10b or the
16 match was initially successful in step 314, the processing moves to Fig. 4, where a fee, or finders
17 fee, is calculated for matching the buy order 20a to the second owner-processor 20b or
18 specifications 20b, step 322. The fee may be calculated according to the size of the buy order 20
19 in units of computer components 100, the total price of the buy order 20 or on a flat fee basis.
20 The calculated fee is charged to either or both owner-processors, step 324. Charging of the fee
21 may be accomplished by a simple paper billing procedure, or through an electronic debit from
22 the owner-processors' 20a, 20b bank accounts 92a and 92b in Fig. 1.

23 The net profit from the transaction just described is calculated by the computer program,
24 step 326. The net profit 30 from the transaction may be calculated as:

25
$$np = \text{fee} - ct$$

26 where np is the net profit 30 from the transaction, the fee is the fee calculated in step 322, and ct
27 is the cost of the transaction. The cost of the transaction may be the estimated or calculated cost

1 of operating the exchange server complex 51 for a fixed period divided by the average number of
2 transactions in that period, or:

3
$$ct = co/trn$$

4 wherein co is the cost of operating the exchange server complex 51 for the fixed period of time,
5 and trn is the number of transactions for that period. Once the net profit 30 is calculated, the
6 computer program 54 apportions the net profit 30 based on the number of shares associated with
7 each owner-processor 10a, 10b, 10. Apportionment is represented by updating the profit
8 database records (indicated by 30 in Fig. 1) in the accounting database 57, step 330.

9 Alternatively, net profits may be directly distributed to the bank accounts 92a, 92b, 92 of owner-
10 processor 10a, 10b, 10 that are associated with the investment instruments or shares 56a, 56b, 56
11 indicating ownership in the exchange server complex 51.

12 In an alternative embodiment, the module 59 for matching buy orders 20a and sell orders
13 20b may comprise a module 59 for matching bids 20a and offers 20b for an on-line auction
14 conducted in the exchange server complex 51. Such an auction may alternatively comprise a
15 reverse auction in which the buyer's owner-processor 10a submits a price as part of the bid 20a
16 that the proprietor of the owner-processor 10a is willing to pay. In this embodiment, the
17 exchange server complex 51 receives a bid 20a comprising a price that the proprietor of the
18 owner-processor 10a is willing to pay, among other computer component specifications. The
19 module 59 for matching buy orders 20a allows proprietors of the seller's owner-processor 10b
20 view the bid 20a, among other bids 20 received from other owner-processors 10, to accept the
21 highest price for selling the components 100. Alternatively, the seller's owner-processor 10b
22 may submit a lowest offer price 20b that the proprietor of the seller's owner-processor 10b would
23 be willing to accept for the computer components 100, the module 59 for matching only
24 accepting bids 20a, 20 that meet or exceed that lowest offer price 20b.